CLAIMS

What we claim is:

1. A method of treating HIV-1 infection, the method comprising contacting a cell susceptible to HIV-1 infection with an amount of peroxiredoxin sufficient to inhibit infection of the cell by HIV-1.

2. The method of claim 1, wherein the peroxiredoxin is selected from the group consisting of type I peroxiredoxin and type II peroxiredoxin.

3. The method of claim 1, wherein the peroxiredoxin is protease-resistant.

4. A method of decreasing the infectivity of HIV-1, if any is present, in a biological sample, the method comprising:
   (a) identifying a biological sample in which a reduction or elimination of HIV-1 infectivity is desirable; and
   (b) contacting the biological sample with an amount of peroxiredoxin sufficient to decrease the infectivity of HIV-1 in the biological sample.

5. The method of claim 3, wherein the biological sample is selected from the group consisting of: blood, plasma, serum, saliva, semen, cervical secretions, saliva, urine, breast milk, cell culture medium, and amniotic fluids.

6. The method of claim 3, wherein the peroxiredoxin is selected from the group consisting of: type I peroxiredoxin and type II peroxiredoxin.

7. The method of claim 3, wherein the peroxiredoxin is protease-resistant.

8. The method of claim 3, wherein the amount of peroxiredoxin is at least about 5 μg/ml of the biological sample volume.

9. The method of claim 3 wherein the amount of peroxiredoxin is at least about 10 μg/ml of the biological sample volume.

10. A method of treating HIV-1 infection, the method comprising contacting a cell susceptible to HIV-1 infection with an amount of manganese dismutase sufficient to inhibit infection of the cell by HIV-1.

11. A method of treating HIV-1 infection, the method comprising introducing into a cell susceptible to HIV-1 infection a DNA molecule encoding a peroxiredoxin, and expressing the peroxiredoxin in an amount sufficient to inhibit infection of the cell by the HIV-1.

12. A method of treating HIV-1 infection in a subject, the method comprising introducing into the subject a cell that expresses a peroxiredoxin in an amount sufficient to inhibit infection of an endogenous cell of the subject, the endogenous cell being susceptible to HIV-1 infection.

13. A biological sample purification system to reduce the number of HIV-1 particles in a biological sample, comprising a peroxiredoxin linked to a surface.

14. A biological sample purification system to reduce the number of HIV-1 particles in a biological sample, comprising a peroxiredoxin linked to a surface, wherein contacting said biological sample and said biological sample purification system results in a reduction in the number of HIV-1 particles present in the biological sample.

15. The purification system of claim 14, wherein said surface is a bead, chip, column, or matrix.

16. A pharmaceutical composition for the treatment or prevention of HIV infection in a subject, comprising a peroxiredoxin and a pharmaceutically acceptable carrier.

17. A kit comprising in one or more containers the pharmaceutical composition of claim 16.